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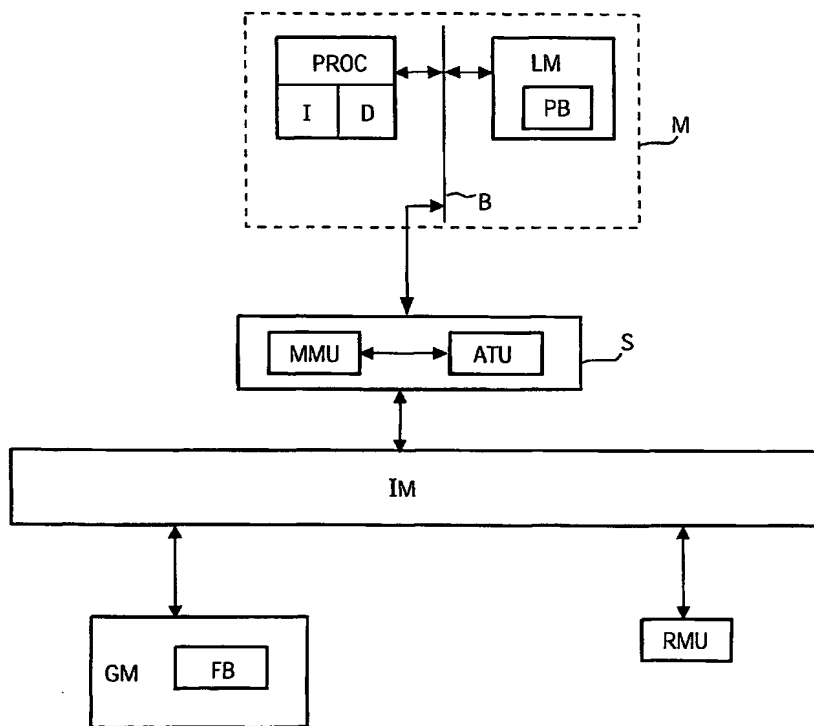6, NL-5656 AA Eindhoven (NL).

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(54) Title: INTEGRATED CIRCUIT WITH DYNAMIC MEMORY ALLOCATION

(57) Abstract: An integrated circuit comprising a plurality of modules (M) for processing applications is provided, wherein each of said modules comprise a local memory (LM). The integrated circuit further comprises a global memory (GM), which can be shared between the plurality of modules (M), and an interconnect means (IM) for interconnecting said modules (M) and said global memory (GM). A memory managing unit (MMU) is associated to each of said modules (M) and determines whether the local memory (LM) provides sufficient memory space for the currently processed application. If this is not the case, the memory managing unit (MMU) requests a global buffer (FB) in said global memory (GM) to be exclusively reserved for the processing data of its associated module (M). Accordingly, by using the local memory (LM), whenever possible, before data is outsourced to the global memory (GM), power as well as bandwidth of the interconnect means can be saved. Furthermore, sufficient flexibility is introduced to the system on-chip to enable running applications that demand more local resources e. g. local memory, than are available in the subsystems or modules (M), without having the need to design the subsystems or modules for worst case scenarios. Especially, when the worst-case demands are much higher than the average case, the cost advantage can be significant.

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

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ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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